WHAT IS CLAIMED IS:

1) An antimicrobial peptide, comprising a periodic peptide with repeating identical monomer units of 2, 3 or 4 residues, wherein the antimicrobial peptide has a minimum length of 4 residues, has 25-75% cationic residues, and the remaining residues are hydrophobic residues, and wherein the antimicrobial peptide has an IC50 of ≤ 125 μg/ml.

2) The antimicrobial peptide of claim 1, wherein the antimicrobial peptide has maximum length of 80 residues and a minimum length of 14 residues.

3) The antimicrobial peptide of claim 1, wherein the antimicrobial peptide is a mixture of antimicrobial peptides having different lengths.

4) The antimicrobial peptide of claim 1, wherein the hydrophobic residues have bulky side chains.

5) The antimicrobial peptide of claim 1, wherein the antimicrobial peptide has biocidal activity of ≤ 125 ppm for 3.5 log kill at 24 hr.

6) The antimicrobial peptide of claim 1, wherein the antimicrobial peptide has antiviral activity as determined by IC50 of ≤ 5mM.

7) The antimicrobial peptide of claim 1, wherein the monomer is a 2mer and the antimicrobial peptide also has anti-tumor cell activity of ≤ TX50 of 250 μg/mL.

8) The antimicrobial peptide of claim 1, wherein said monomers are selected from the group consisting of PNNP, NNPP, NPPN, PPNN, PNPN, NPNP, PNP, NPP, PPN, NPN, PNN, NNP, NP and PN, wherein P is any cationic residue and N is any hydrophobic.

9) The antimicrobial peptide of claim 1, wherein said monomers are composed of P2N2, P3N, PN3, PN2, P2N, and NP, wherein P is any cationic residue and N is any hydrophobic residue and the N and P residues are in any order.

10) An antimicrobial peptide comprising,

a) a periodic peptide having repeating identical monomer units;

b) wherein the monomer is selected from the group consisting of P2N2, PN3, P3N, P2N, NP2, and NP, wherein P is any cationic residue and N is any hydrophobic residue and wherein the P and N residues are in any order;

c) and wherein the antimicrobial peptide has a minimum length of 4 residues; and

d) the antimicrobial peptide has antimicrobial activity as determined by IC50 of ≤ 125 μg/ml against a target cell.

11) The antimicrobial peptide of claim 10, wherein the antimicrobial peptide has maximum length of 80 residues and a minimum length of 14 residues.

12) The antimicrobial peptide of claim 10, having biocidal activity of ≤ 125 ppm for 3.5 log kill at 24 hours.

13) The antimicrobial peptide of claim 10, wherein the antimicrobial peptide has anti-tumor cell activity of ≤ TX50 of 250 μg/mL.

14) The antimicrobial peptide of claim 10, wherein the monomer is selected from the group consisting of PNNP, NNPP, NPPN, PPNN, PNPN, NPNP, PNP, NPP, PPN, NPN, PNN, NNP, NP and PN and P is any of K , O, or R residue and N is any of A, F, G, L I, T, Y, W, V, or M residue.

15) A peptide comprising,

a) a periodic peptide having repeated monomer units;

b) wherein the monomer is selected from the group consisting of PNNP, NNPP, NPPN, PPNN, PNPN, NPNP, PNP, NPP, PPN, NPN, PNN, NNP, NP and PN and P is any of K , O, or R residue and N is any of A, F, G, L, I, T, Y, W, V, or M residue;

c) and wherein the peptide has a minimum length of 14 residues and a maximum length of 80 residues; and

d) the peptide has antimicrobial activity as determined by IC50 of $\leq$ 125 μg/ml against a target cell.

16) A peptide comprising a sequence selected from the group of SEQ ID NO: 1-56.

17) A peptide consisting essentially of a sequence selected from the group of SEQ ID NO: 1-56.

18) A peptide consisting of a sequence selected from the group of SEQ ID NO: 1-56.

19) A pharmaceutical composition comprising an peptide in any one of claims 1-18 and a pharmaceutically acceptable carrier.

20) A method of manufacturing periodic peptides comprising: oligomerizing identical monomer units having 2, 3 or 4 residues via condensation to form an antimicrobial peptide;

a) said antimicrobial peptide having a length of $\geq$ 14 residues, at least 25% cationic residues and the remaining residues hydrophobic, and having an IC50 of $\leq$ 125 μg/ml against a target cell.

21) A process for inhibiting growth of a target cell comprising administering to a target cell a peptide in any one of claims 1-18 in an amount effective to inhibit growth of said target cell.

22) A process for killing a target cell comprising administering to a target cell a peptide of any one of claims 1-18 in an amount effective to kill said target cell.